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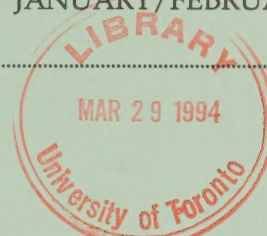
In Common

MINISTRY OF EDUCATION AND TRAINING

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Technological Education in The Common Curriculum



The Common Curriculum, Grades 1–9 identifies technological education as one of the ten cross-curricular learning outcomes. Technological education consists of much more than teaching students to use computers and other types of electronic equipment. It also includes study of the practical use of ideas, materials, and energy to create products, processes, and systems to improve society, as well as analysis and assessment of the impact of these products, processes, and systems on society and the environment.

Each of the four core program areas has a role to play in contributing to students' technological education. Technological education can be used to demonstrate the links within and among the four program areas and thus can serve as a means of integrating the study of these areas.

Technological education is an important component of the Mathematics, Science, and Technology program area. Several of the learning outcomes in this program area are specifically connected with technology; they include the safe use of various materials, tools, and equipment, and the design and production of items to solve a particular problem. Other outcomes reflect the close connection between tech-

nological education and mathematics and science; they include the application of mathematical and scientific principles in technological inquiry, and the use of creative and critical-thinking skills and a disciplined approach in problem solving, inquiry, and design.

In technological education programs at all grade levels, there are two common threads: the use of the design process as an open-ended approach to problem solving, and the use of ten technological concepts in the three areas of physical products, social systems, and environmental systems. More information on these topics will be avail-

able soon in a document entitled *Technological Education: A Policy Overview*. Two resource documents are also being developed – *Design Processes in Technology* for Grades 7, 8, and 9 and *Time for Technology* for Grades 1 to 6.

In most cases, introducing technological education into the curriculum will not mean introducing new content. Rather, it will mean identifying as technological much material that is already in the curriculum. The purpose of technological education is to ensure that all students develop the competence to deal effectively with technology in an increasingly technological society.

Professional Literature Related to The Common Curriculum

Outcomes-based education and integrated programming are key features of *The Common Curriculum, Grades 1–9*. Each of these topics is dealt with in a sizeable body of international literature. It is important to learn from the experience of others as we develop educational policies and practices that are appropriate for Ontario.

The following are some entry

points to this literature. Reference should also be made to the ministry's *Transition Years: Preliminary List of Resources*, 1992.

Outcomes-based Education

The Common Curriculum describes curriculum in terms of learning outcomes rather than objectives or

(continued on next page)

In Common is a newsletter produced by the Ministry of Education and Training to communicate information about the implementation of *The Common Curriculum, Grades 1–9* and to encourage feedback from schools and their communities. Such feedback will be used to revise the document and make it more responsive to the needs of the communities in which it is used. *In Common* will be produced approximately every two months.

Cette publication est également offerte en français sous le titre suivant : *En commun*.

Professional Literature ... (continued from front page)

allotted time. Outcomes are observable/measurable results. They describe the knowledge, skills, and some of the values that students should have as a result of their learning experiences.

A key factor in influencing the direction of educational reform internationally is the movement towards defining curriculum in terms of learning outcomes. Development of outcomes-based curriculum is a priority in Australia, England and Wales, New Zealand, and parts of the United States and Canada.

Suggested journal issues

Educational Leadership 49, no. 2 (1991)

Orbit 24, no. 2 (1993)

Suggested articles

Baxter, Gloria, and Earl, Lorna. "Outcomes-Based Education: The Canadian Picture". *Outcomes* 12, no. 3 (1993), pp. 10-17.

Earl, Lorna. "What Are Outcomes Anyway?" *Research Speaks to Teachers* 27, no. 3 (February 1993). (Available from the Program Department, Research Centre, Board of Education for the City of Scarborough.)

Glatthorn, Allan A. "Outcomes Based Education: Reform and the Curriculum Process". *Journal of Curriculum and Supervision* 8, no. 4 (1993), pp. 354-63.

Rappolt, Gail. "Towards Accountability and Results-oriented Education: Developing Provincial Standards". *Orbit* 24, no. 2 (1993), pp. 2-5.

Spady, William G., and Marshall, Kit J. "Beyond Traditional Outcomes Based Education". *Educational Leadership* 49, no. 2 (1991), pp. 67-72.

Integrated Programming

The Common Curriculum emphasizes the connections between subjects, ideas, people, and phenomena.

Outcomes are organized into broad program areas rather than traditional subject disciplines.

In many jurisdictions, efforts in identifying key outcomes for education – that is, determining what students will need to live satisfying and productive lives in a changing world – have moved educators and schools towards integrated programming. Many of the outcomes people value most do not fit neatly into a single subject area. Moreover, knowledge, issues, and problems in the modern world are interrelated in complex ways.

Suggested journal issues

Educational Leadership 49, no. 2 (1991)

Orbit 23, no. 2 (1992)

Suggested articles and books

Brownlie, Faye; Gambell, Trevor J.; Miller, Jack; and Rosborough, Kathleen. "Exchanging Views From Coast to Coast: Across Canada Dialogue on Integrated Curriculum". *Orbit* 23, no. 2 (1992), pp. 16-19.

Drake, Susan M. *Planning Integrated Curriculum: The Call to Adventure*. Alexandria, Virginia: Association for Supervision and Curriculum Development, 1993.

Fogarty, Robin. "Ten Ways to Integrate Curriculum". *Educational Leadership* 49, no. 2 (1991), pp. 61-65.

Miller, J.; Cassie, J. R. B.; and Drake, S. M. *Holistic Learning: A Teacher's Guide to Integrated Studies*. Toronto: OISE Press, 1990.

Comments on The Common Curriculum

Here are some of the comments received to date on *The Common Curriculum, Grades 1-9*.

- The document is too long, particularly Part IV with the outcomes for Grades 3, 6, and 9.
- The document should be available on computer disk to make it easier for teachers to use. (Note: It is now on disk. For details, see the November/December 1993 issue of *In Common*.)
- The format is too complex. Perhaps outcomes for each program area should be in a separate document or colour-coded in the current format. It would help to add an index, wall charts, summary guides, and flow charts.
- Divide the document into two separate parts: a simple and clear policy document, and a resource document with supportive strategies for teachers.
- Add examples to outcomes in all program areas.

- The introductory sections of the February 1993 document are clear and concise.
- There is a lot of redundancy in the document as a whole. The style is repetitive and circular at times.
- The language is open to interpretation and difficult to translate into classroom strategies.
- Address gender equity by replacing "individuals" and "people" with "men and women".
- The September 1993 version for parents and the general public is clearer and more user-friendly than the official curriculum of February 1993. It is important to communicate effectively with educators, parents, and the broader community alike.
- There should be links to the provincial standards for mathematics and language.

The Common Curriculum: Some Questions and Answers

Q. What are some key features of the common curriculum?

A. Three key features are:

- It is designed for **all students**. Each class will therefore include students with a wide variety of abilities, interests, backgrounds, strengths, and needs.
- It is described in terms of **learning outcomes**. These are statements of the measurable/observable results that students are expected to achieve. Students will achieve the outcomes at different rates and in different ways through various programs, learning activities, and learning resources.

- It requires **integrated programming**. The curriculum recognizes the increasing complexity of the world we live in. The outcomes therefore emphasize connections and relationships among subjects, people, ideas, and phenomena.

Q. What is the difference between *The Common Curriculum, Grades 1–9* released in February 1993 and *The Common Curriculum, Grades 1–9: Version for Parents and the General Public* released in September 1993?

A. The February 1993 document is the official curriculum. It was written primarily for teachers and was difficult to read for people who did not have professional qualifications in education. The document for parents and the general public fulfills the need for information about education that is readily available to everyone. The next version of *The Common Curriculum*, which is expected to be ready in December 1994, will be written in plain language and will supersede both 1993 documents.

Q. What is the significance of the ten cross-curricular learning outcomes identified in Part II of *The Common Curriculum*?

A. The ten cross-curricular learning outcomes are the focus of the entire school program to the end of Grade 9. They describe a comprehensive view of what constitutes basic education to prepare students for life in the twenty-first century. By the end of Grade 9, the outcomes are to be achieved to a degree that will enable all students to function effectively in everyday life and work, and to pursue appropriate further studies of their choice. Enabling students to

achieve the outcomes is the responsibility of all school staff.

Q. What is the purpose of the learning outcomes identified for each of the core program areas in Parts III and IV of *The Common Curriculum*?

A. The outcomes for each of the core program areas contribute to students' achievement of the ten cross-curricular learning outcomes identified in Part II of the document.

A Word From the Lennox and Addington County Board

Exciting things are happening in the schools of Lennox and Addington. Teams of Intermediate Division teachers have been enthusiastically developing integrated units to help students achieve Mathematics, Science, and Technology outcomes. The units focus on such themes as structures, discoveries, transportation, and manufacturing, and will be implemented over the next several weeks.

Outcomes for each unit were identified by the various teams, and brainstorming sessions with students provided the content framework. Activities were chosen that reflect an emphasis on active and co-operative learning strategies. Methods of assessment and evaluation include various formats such as ruling scales for self-evaluation and peer evaluation, essays, and formal tests.

A Word From the Niagara South Board

Niagara South has produced a new curriculum document for Grades 7 and 8 entitled "Science and Technology". It is an integrated program through which students can become competent in the concepts and skills of these two important and related areas of learning. A set of integrated outcomes for the program was developed using both *The Common Curriculum, Grades 1–9* and knowledge in the areas of science and technology that is appropriate for students in Grades 7 and 8.

In traditional curricula, knowledge is frequently emphasized at the expense of skills and values. The Niagara South program attempts to correct this imbalance by placing emphasis on active and investigative learning about the processes of science and technology in a context that is designed to ensure student interest. Mathematics skills and knowledge, for example, are applied within the framework of scientific and technological experiments and experiences.

Invitation to Respond

It is important that Ontario's curriculum policy continue to evolve in response to a rapidly changing world. The Ministry of Education and Training invites you to send in your comments on The Common Curriculum as part of the process of responding to developments as they occur.

When *The Common Curriculum, Grades 1-9* was released as a working document last year, the Minister of Education and Training announced that it was to be implemented over a three-year period beginning in September 1993. At the same time, he stated that it would be revised on the basis of responses from educators and the public. An updated version of the working document is expected to be released in December 1994.

The Ministry of Education and Training invites you to be part of the review process. Your comments and suggestions can make a difference.

Responses are being analysed by a working committee composed of representatives of the Ontario Teachers' Federation and its affiliates, the Ontario supervisory officers' associations, and the Ministry of Education and Training. Research leadership and expertise is being provided by Dr. Lorna Earl, Research Director, Board of Education for the City of Scarborough. This review committee will complete its analysis by June 30, 1994, and will provide recommendations and advice to the ministry.

Content of Responses

Please consider *any or all* of the questions given below when writing your response, and comment on *any or all* of the sections of *The Common Curriculum* when answering the questions. Indicate whether you are referring to the official curriculum document of February 1993 or the version of September 1993 for parents and the general public.

1. Format and Style
 - What is useful? Why?
 - What should be changed? How?
2. Content and Organization
 - What is valuable? Why?
 - What needs to be clarified? How?
 - What needs to be changed? How?
 - What needs to be added?

3. Other

- What other suggestions do you have for improving *The Common Curriculum*?

Information on Respondents

Please include the following information with your response:

- your name and mailing address, if you are responding as an individual
- the name and mailing address of your group or organization, if the response is from a group

Also indicate to which of the following categories you or your group belongs (choose more than one, if appropriate):

- teacher
- curriculum specialist
- parent
- other (specify)

Deadline

Please send your response as soon as possible so that the review committee can meet its deadline. To be included in this review, your response must be received by **May 1, 1994**. Revision of *The Common Curriculum* will begin in early July 1994.

Please send your response to:

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